Miami Dade College

Course Description

COP4807 | Web Programming with Java | 4.00 credits

This is upper division course for students majoring in Information Systems Technology introduces students to the design, implementation and testing of web-based applications using the Java language. The student will learn about the three-tier architecture, the Model View Controller architecture, servlets, and Java Server Pages, JDBC/JPA, and Web Services. Prerequisite: COP3530.

Course Competencies:

Competency 1: The student will demonstrate an understanding of the three-tier architecture by:

1. Describing the three-tier architecture
2. Mapping Java Enterprise Edition components to the three tiers
3. Discussing the advantages/disadvantages of multi-tiered web applications

Competency 2: The student will demonstrate an understanding of the Model View Controller design pattern by:

1. Defining the Model View Controller design pattern
2. Discussing the advantages of the MVC pattern
3. Discussing which Java Enterprise Edition components are used to implement the MVC architecture

Competency 3: The student will demonstrate an understanding of Java Servlets by:

1. Describing the benefits of Java Servlet technology
2. Describing the servlet lifecycle
3. Describing the servlet's environment, including HTTP objects and HTML form objects
4. Designing and implementing Java Servlets
5. Deploying Java servlets
6. Using client sessions and cookies
7. Using filters

Competency 4: The student will demonstrate an understanding of Java Server Pages (JSPs) by:

1. Describing the benefits of Java Server Pages
2. Describing the lifecycle of JSPs
3. Designing and implementing Java Server Pages
5. Deploying Java Server Pages
6. Creating Servlets that forward control to JSPs
7. Using the Expression language (EL)
8. Using JSTL tags

Competency 5: The student will demonstrate an understanding of JDBC/JPA by:

1. Discussing the role of Java Databases Connectivity (JDBC)
2. Discussing the role of JPA (Java Persistence API)
3. Using JDBC and/or JPA to connect to a database

Competency 6: The student will demonstrate an understanding of Web services by:

1. Defining web services and their protocols
2. Creating a RESTful web service in a servlet container
3. Configuring Java EE security for a web service

Competency 7: The student will demonstrate an understanding of Web application Security by: Describing the role

of the container in security

1. Implementing authentication models
2. Using encryption between a web application and the client browser

Learning Outcomes:

- Use computer and emerging technologies effectively